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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,271	07/31/2003	Robert M. Montgomery	GCSD-1231 (51310)	3783
27975	7590	12/27/2005	EXAMINER	
ALLEN, DYER, DOPPELT, MILBRATH & GILCHRIST P.A.			CONNOLLY, PATRICK J	
1401 CITRUS CENTER 255 SOUTH ORANGE AVENUE			ART UNIT	
P.O. BOX 3791			PAPER NUMBER	
ORLANDO, FL 32802-3791			2877	

DATE MAILED: 12/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/631,271

Applicant(s)

MONTGOMERY, ROBERT M.

Examiner

Patrick J. Connolly

Art Unit

2877

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 September 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-38 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 11-17, 23-30 and 35-38 is/are rejected.
- 7) ☒ Claim(s) 6-10, 18-22 and 31-34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-38 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 11, 12, 15, 23, 24, 27, 28, 35 and 36 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by U.S. Patent No. 6,134,003 to Tearney et al (hereafter Tearney).

As to **claims 1 and 27**, Tearney discloses a method and apparatus for optical measurements and profiling including: (see Figure 16 below):

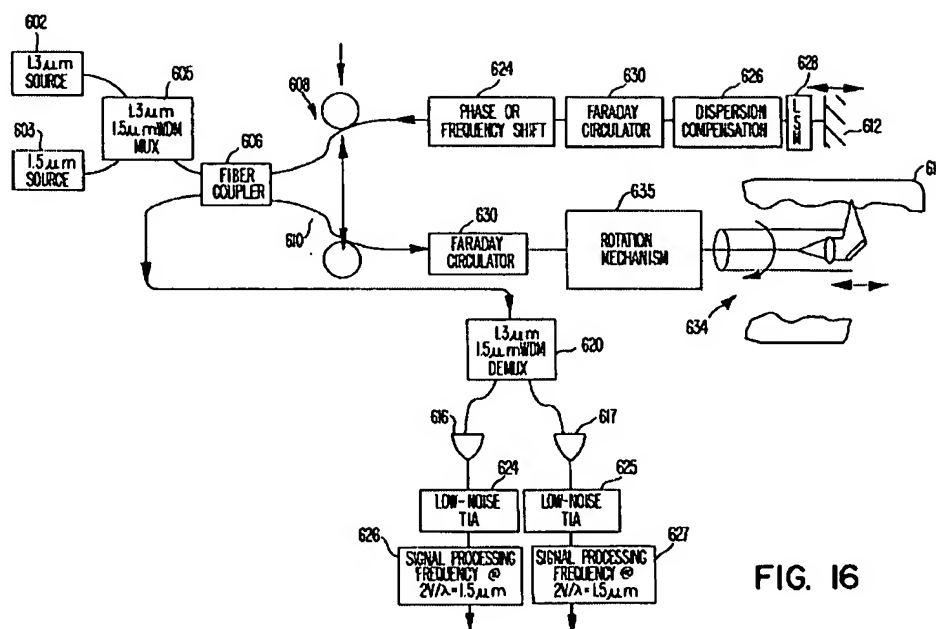


FIG. 16

an optical detector (616, 617);

an optical source (602, 603) for generating a transmit beam comprising a plurality of wavelengths (1.5 μm, 1.3 μm), and for generating a reference beam comprising the plurality of wavelengths (608); and

at least one optical element (634) for directing the transmit beam to a target (614), for directing a resulting reflected transmit beam back from the target to said optical detector, and for combining the reference beam with the reflected transmit beam so that a profile of the target is based upon fringe contrast produced by the plurality of wavelengths in the reference beam and the plurality of wavelengths in the reflected transmit beam.

As to **claims 15, 2, 3 and 28**, Tearney discloses an optical profile determining device including (see Figure 16 above):

an optical detector (616, 617);

a plurality of lasers (602, 603) for generating a plurality of individual transmit beams, each laser operating at a different wavelength (1.5 μm , 1.3 μm);

a multiplexer (605) for multiplexing the plurality of individual transmit beams into a combined transmit beam;

a splitter (606) downstream from said multiplexer for splitting the combined transmit beam into a first beam and a second beam, the first beam defining a transmit beam;

a delay circuit (608, 624, 630, 626, 628, 612) downstream from said splitter for delaying the second beam to define a reference beam; and

at least one optical element (634) for directing the transmit beam to a target (614), for directing a resulting reflected transmit beam back from the target to said optical detector, and for combining the reference beam with the reflected transmit beam so that a profile of the target is based upon fringe contrast produced by the plurality of wavelengths in the reference beam and the plurality of wavelengths in the reflected transmit beam.

As to **claims 11, 12, 23, 24, 35 and 36**, Tearney discloses computing the distance to the target based upon an amplitude of the fringe contrast and also upon the amplitude of the fringe contrast in a ratio of a peak-to-peak variation in intensity to average intensity (see columns 17 and 18).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary

skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims **5, 13, 14, 17, 25, 26, 30, 37 and 38** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tearney as applied above.

As to claims **5, 17 and 30**, Tearney teaches that the endoscopic unit can include a variety of optics including lenses and lenslet arrays for focusing on the target (see column 9, lines 4-13).

It would have been obvious to one of ordinary skill in art at the time of invention to use two lenses in combination with a lenslet array in the apparatus of Tearney so as to achieve a predetermined measurement scope based on the target of interest.

As to claims **13, 25 and 37**, Tearney teaches a detector used in combination with the method and apparatus of optical profiling.

Tearney does not teach a CCD element specifically.

The Examiner takes Official Notice of the fact that it is well known in the art to use CCD detectors in combination with interferometers used to provide profiles or contours of objects because they provide rugged and accurate wavefront image information.

It would have been obvious to one of ordinary skill in the art at the time of invention to use a CCD in combination with the apparatus and method of Tearney for said advantages.

As to claims **14, 26, and 38**, Tearney does not teach a specific duration of exposure for the detector element.

The Examiner takes Official Notice of the fact that it is well known in the art to make brief measurements in interferometry involving imaging, contouring or profiling so as to achieve rapid image information in environments where the targets to be imaged are either moving or changing so as to achieve accurate and complete images of said targets.

It would have been obvious to one of ordinary skill in the art to expose the detector of Tearney briefly or only once so as to achieve said advantages.

Claims **4, 16 and 29** are rejected under 35 U.S.C. 103(a) as being unpatentable over Tearney as applied to claims 1-3, 5, 11-15, 17, 23-28, 30 and 35-38 above, and further in view of U.S. Patent No. 5,777,736 to Horton (hereafter Horton).

As to claims 4, 16 and 29, Horton teaches an interferometric imaging spectrometer including tilted wavefronts (see for example, Figure 8).

Horton teaches that tilting the wavefronts within the interferometer can eliminate dispersion effects that can create problems for imaging (see columns 11 and 12).

It would have been obvious to one of ordinary skill in the art at the time of invention to tilt the wavefronts of Tearney via the teaching of Horton so as to eliminate dispersive effects and artifacts and thereby improve the quality of the image detected.

Allowable Subject Matter

Claims **6-10, 18-22 and 31-34** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As to claims **6, 18 and 31**, the prior art of record, taken alone or in combination, fails to disclose or render obvious a method or apparatus for optical profiling including: a plurality of spaced apart reflectors at predetermined locations on the target in combination with plural wavelength limitations of the reference and transmitted beams.

Claims **7, 8, 19, 20, 32 and 33** are objected to by virtue of their respective dependence on claims **6, 18 and 31**.

As to claims **9, 21, and 33**, the prior art of record, taken alone or in combination fail to disclose or render obvious a method or apparatus for optical profiling including: a mirror having an opening therein for receiving a transmit beam and a reference beam, said mirror also directing the reflected transmit beam to an optical detector in combination with the plural wavelength requirements of the reference and transmit beams.

Claims **10, 22, and 34** are objected to by virtue of the respective dependence on claims **9, 21 and 33**.

Conclusion

"Several facts have been relied upon from the personal knowledge of the examiner about which the examiner took Official Notice. Applicant must seasonably challenge well known statements and statements based on personal knowledge when they are made by the Board of Patent Appeals and Interferences. In re Selmi, 156 F.2d 96, 70 USPQ 197 (CCPA 1946); In re Fischer, 125 F.2d 725, 52 USPQ 473 (CCPA 1942). See also In re Boon, 439 F.2d 724, 169 USPQ 231 (CCPA 1971) (a challenge to the taking of judicial notice must contain adequate information or argument to create on its face a reasonable doubt regarding the circumstances justifying the judicial notice). If applicant does not seasonably traverse the well-known statement during examination, then the object of the well known statement is taken to be admitted prior art. In re Chevenard, 139 F.2d 71, 60 USPQ 239 (CCPA 1943). A seasonable challenge constitutes a demand for evidence made as soon as practicable during prosecution. Thus, applicant is charged

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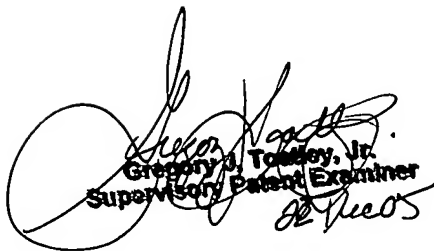
with rebutting the well-known statement in the next reply after the Office action in which the well known statement was made."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrick J. Connolly whose telephone number is 571.272.2412. The examiner can normally be reached on 9:00 am - 7:00 pm Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory J. Toatley, Jr. can be reached on 571.272.2800 ext. 77. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

pjc/PT
12.15.2005


Gregory J. Toatley, Jr.
Supervisory Patent Examiner
12.15.2005